



United States
Department of
Agriculture

Forest
Service

Forest
Health
Protection

2550 Riverside Drive
Susanville, CA 96130
(530) 257-2151 Voice
(530) 252-6624 TTY
(530) 252-6428 Fax

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Subject: Functional assistance trip to Little Grass Valley Reservoir area to review hazard tree marking guidelines (FHP Report NE10-11).

To: Karen Hayden, District Ranger, Feather River RD, Plumas National Forest

Forest Health Protection (FHP) staff joined personnel from the Feather River RD to review hazard tree marking guidelines and discuss trees marked for removal along Forest Service roads 22N68 and 22N60 on September 23, 2010. The purpose of this trip was to ensure that guidelines developed, in part, by FHP were fully understood by all participants and to review and answer any questions regarding potential failure indicators such as stem decay, root injury, excessive lean and the presence of Heterobasidion root disease (formerly annosus root disease).

Upon review of the written guidelines, several examples of marked trees were examined by all participants. Tree species most likely encountered during this roadside hazard tree abatement project were white fir and red fir but some sugar pine, ponderosa pine, incense cedar and Jeffrey pine were evaluated and marked for removal.

Based on the observations and discussions of marked trees along these two Forest Service roads it appears that District employees have a good understanding of the hazard tree marking guideline criteria and are applying the guidelines appropriately in nearly all cases based on the goals of the project (i.e. to remove trees considered as imminent or highly likely to fail in the near future). However, four tree failure indicators were identified that need further clarification. Two are in regards to sugar pine, and may be applied to all pine species, and two apply to all conifer species within the project area.

The first indicator is older dead tops in sugar pine. Older dead tops in sugar pine (most likely caused by white pine blister rust infections) are typically dry; resin impregnated and are not considered more hazardous than other portions of the tree. Recent dead tops (brown needles present) in pine species that are not associated with rust fungi should be closely examined for decay.

The second indicator is basal injury on sugar pine. Basal injuries are typically in the form of old fire scars and old mechanical injuries from past harvest activity. Extensive decay associated with basal wounding of pines is uncommon due to their ability to produce resin. Furthermore, pines with old fire scars, if not in excess of 50% of the bole circumference, typically have put on significant growth since the scar was created, and barring any other defects, are at a low risk of failure. Evidence of decay within fire or mechanical caused scars on pine species should be investigated thoroughly to determine the amount of decay in proportion to the bole diameter. Generally, a tree that possesses at least 1/3 of its diameter in sound wood is not considered a high risk for failure (this is assuming that the decay is heart rot and there exists a ring of sound wood



around the entire circumference of the stem). This sound wood requirement is increased by approximately 25% if the decay cavity is open to the outside of the tree. For example, a 15" diameter stem with heart rot would require at least a 2.5" thick ring of sound wood to be considered a low risk for failure. A 15" diameter tree with the decay cavity open to the outside would require the remaining portion of the ring to be at least 3.2" thick.

The third indicator is active crown fade. Hazard tree guidelines being utilized for this project include a reference to FHP salvage marking guidelines. The salvage marking guidelines help determine if a tree is dying by identifying bark and/or wood boring beetle activity and the presence and level of active crown fade depending on tree species and precipitation zone. Currently, high levels of annual and drought induced needle cast are occurring in most conifer species throughout northeastern California making the active crown fade criteria hard to determine. For the purposes of identifying active crown fade in order to make the dying tree determination, evaluators must disregard annual and drought induced needle cast, which consists only of the older needle complement. Only trees that have the required percentage of their needle complement fading, which has to include the current year needles, should be marked under the active crown fade criteria.

The last indicator is the presence of *Phellinus pini* conks on tree boles (most commonly found on Jeffrey pine, ponderosa pine and Douglas-fir). The presence of *P. pini* conks is an indicator of heartwood decay but based on past observations of infected trees without any other defects, the failure potential is low. Failure potential increases with the number of conks but seldom to the level that would be considered as imminent or highly likely. In a campground situation, trees with numerous (≥ 5) *P. pini* conks, separated by ≥ 15 feet, should be carefully inspected for decay to determine the hazard potential (refer to FHP Report NE04-04 regarding Paradise Lake CG for more information).

Please contact me at 530-252-6431 if you have any questions.

/s/ *Danny Cluck*

Daniel R. Cluck
Entomologist

cc: Judy Welles, Silviculturist, Feather River RD
Dan Roskopf, Forester (Silviculture), Feather River RD